



PRISM

Client Care Report

We looked at your health through a new lens...

The information contained in this report is not to be construed as medical advice.



Our Analysis

Here's what we think is going on:

Personalized Health Report: Client

Introduction

This is your second-round report, and the picture has come into much sharper focus since May. Nine weeks of foundational work moved a few things (your ALT dropped from 50 to 32 — real, measurable proof that reducing alcohol is doing its job on your liver), but your top complaints — belly fat, fatigue, brain fog, anxiety — have not budged. That is a signal, not a failure. It tells us the dominant driver was not yet on the map. It is now.

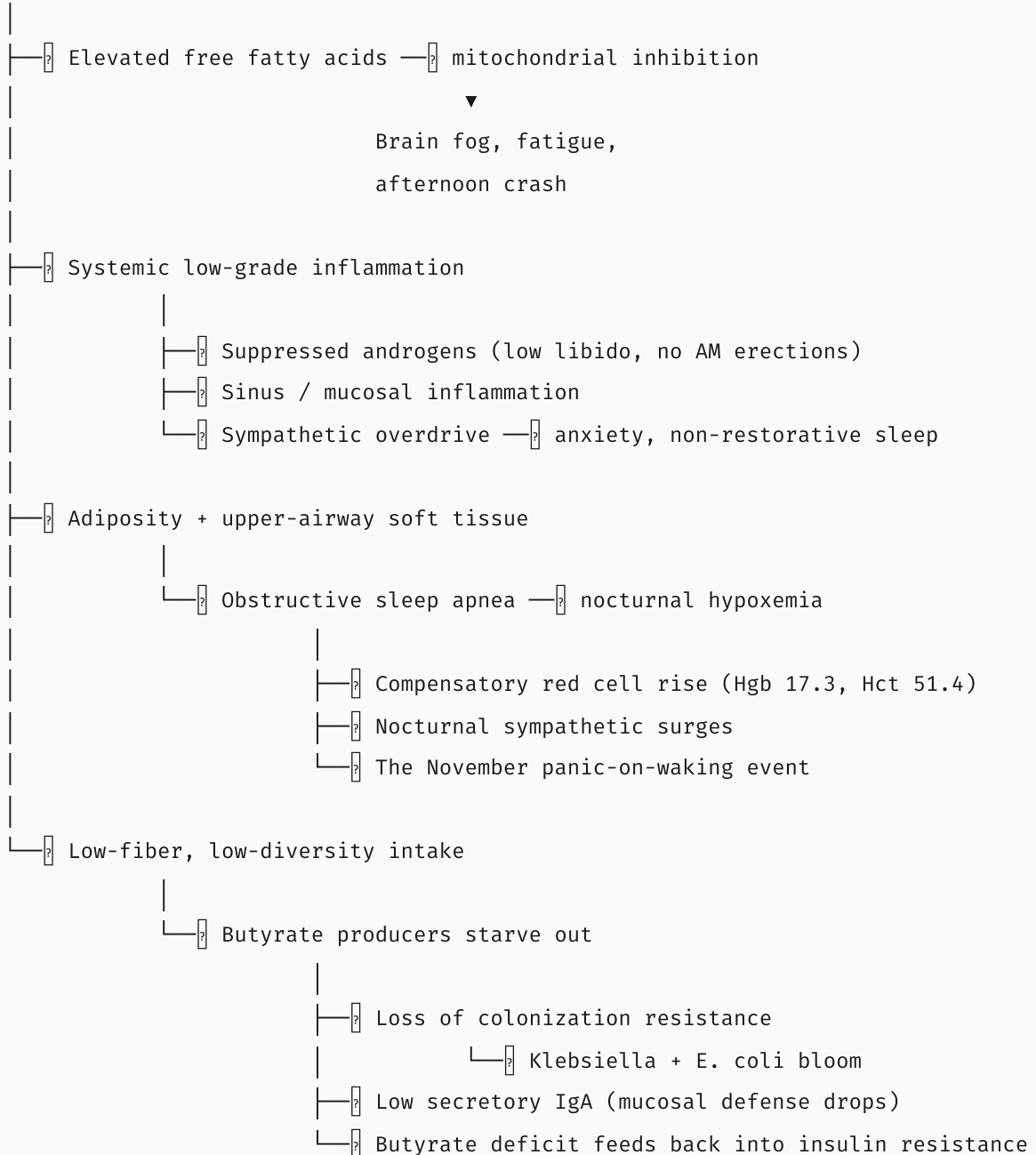
The July labs reorganize the case decisively. Your thyroid is not the problem — Free T3 is at the top of the range and Free T4 is in the upper half. What is confirmed is **compensated hyperinsulinemia**: a fasting insulin of 23 holding your glucose at a normal 85. In plain terms, your pancreas is working very hard behind the scenes to keep blood sugar in line, and that background effort is what is locking fat into your midsection, dragging your afternoons into a crash, and quietly amplifying almost every other symptom you have. Your Genova stool test tells the parallel story in the gut: the keystone butyrate-producing bacteria are gone (below detection), butyrate itself is low, and a *Klebsiella oxytoca* overgrowth has expanded into the vacancy.

The bioenergetic thread that ties this together is worth stating clearly, because Dalton wanted you to see it.

Excess adiposity + liquid sugar load



Chronic hyperinsulinemia (insulin 23)



Insulin resistance, free fatty acids, and inflammation are not just three findings on a lab sheet. They are the shared upstream drivers of your gut picture, your sleep picture, your anxiety picture, and your fat-loss resistance. Move them, and everything downstream moves. That is why this plan looks like one big lever (fat loss + gut rebuild) rather than a scattered pile of interventions for each symptom.

A note on your March event: you added desiccated thyroid to a system that already had a full complement of active thyroid hormone. That is what produced the cardiac sensation and the ER visit — not a cardiac problem, and not a thyroid deficiency. It also produced a prescription for metoprolol that a subsequent 2-week Holter showed you never needed. That drug is now working against you across nearly every domain we are trying to move. Handling it correctly — carefully, physician-directed, and only after the sleep picture is clarified — is a core piece of this plan.

Assessment Findings

Previous Diagnostics

Here is your previous information viewed through a new lens:

Test	Your Result	Our Range
Fasting Insulin	23.0 uIU/mL	<5 uIU/mL

HOMA-IR calculates to 4.8. The fasting glucose of 85 is not reassurance — it is the number your pancreas is buying with a very large insulin bill. This is the earliest, most treatable phase of insulin resistance: your cells have grown resistant but glucose has not yet drifted upward. It is the direct explanation for the belly-central fat pattern, the puffiness, the afternoon crash, and the fat-loss stall despite the 47 lb you have already dropped. This one number reorganizes the case around a single lever: reduce hyperinsulinemia, and nearly every other complaint improves as a consequence.

Test	Your Result	Our Range
Reverse T3	24 ng/dL	9.2–16.7 ng/dL
Free T3	4.0 pg/mL	3.5–4.5 pg/mL
Free T4	1.5 ng/dL	1.2–1.8 ng/dL
TSH	1.23 uIU/mL	<1.5 uIU/mL

Reverse T3 is elevated, but the context is unusual and important: it is elevated against a **backdrop of abundant Free T3 and Free T4**. This is not hypothyroidism. You are producing and converting thyroid hormone well; some of it is being shunted toward the inactive reverse form. The two most likely drivers of that shunting are metoprolol (well documented to raise rT3) and the metabolic stress of hyperinsulinemia and adiposity. This is a signal to protect, not to attack — any repeat trial of desiccated thyroid, glandular, or T3 in this setting is contraindicated and would risk reproducing the March event.

Test	Your Result	Our Range
Hemoglobin	17.3 g/dL	13.2–17.1 g/dL
Hematocrit	51.4 %	41.4–47.1 % (male)
RBC	5.64 M/uL	4.60–5.40 M/uL

Secondary erythrocytosis in a 28-year-old, non-TRT male. The two most likely causes here are nocturnal hypoxemia from obstructive sleep apnea and carbon monoxide from your ~5 cigarettes/day — both are probably operating. Layered on the confirmed snoring, BMI 35, non-restorative sleep, nocturia, and the November panic-on-waking event, this makes OSA a leading upstream driver and moves a home sleep study to the top of the plan. There is a small chance of hemoconcentration artifact (the draw was difficult, albumin 4.9 is high-normal), which is why we'll confirm on the Week 16 recheck rather than lock it in as fixed today.

Test	Your Result	Our Range
Vitamin D, 25-OH	28 ng/mL	40–90 ng/mL

Insufficient. Vitamin D is a direct modulator of insulin sensitivity, androgen signaling, mood, and mucosal immunity — every one of which is on your active problem list. This is a cheap, high-yield correction.

Test	Your Result	Our Range
AST	34 U/L	0–30 U/L
ALT	32 U/L	0–30 U/L
ALT (March 2026)	50 U/L	0–30 U/L

Still mildly elevated, but this is the clearest evidence in the panel that what you have already changed is working. ALT dropped from 50 to 32 in four months — that trajectory is entirely attributable to the alcohol reduction. Maintaining abstinence and dropping visceral fat should carry these into range.

Test	Your Result	Our Range
Urine Indican	3+ Positive	Negative

Elevated urinary indole. Previously read as diffuse small-intestinal putrefaction; the stool results now supply the specific source — *Klebsiella oxytoca* is indole-positive, and your colonic protein breakdown is actually low (1.0). This is very likely the *Klebsiella*'s signature and should fall as the overgrowth resolves.

Genova GI Effects — the core abnormality:

Marker	Your Result	Our Range
Total SCFA	17.9 $\mu\text{mol/g}$	$\geq 23.3 \mu\text{mol/g}$
n-Butyrate concentration	2.1 $\mu\text{mol/g}$	$\geq 3.6 \mu\text{mol/g}$
Faecalibacterium prausnitzii	<DL	$\geq 1.1\text{E}6 \text{ CFU/g}$
Akkermansia muciniphila	<DL	$\geq 8.5\text{E}3 \text{ CFU/g}$
Roseburia spp.	1.1E6 (floor)	1.1E6–1.1E9
Ruminococcus bromii, Coprococcus, Butyrivibrio	<DL	detectable
Klebsiella oxytoca (culture)	4+ Potential Pathogen	not detected
Fecal Secretory IgA	172 mcg/mL	low end of reference

This is a **depletion picture, not an overgrowth or inflammation picture**. Calprotectin, EPX, and occult blood are all clean. Pancreatic elastase is >500 . Digestion and mucosal inflammation are fine. What is broken is the fuel-producing arm of your microbiome: the bacteria that make butyrate from fiber are gone, so colonocytes have lost their preferred fuel, epithelial oxygen levels have risen, and facultative anaerobes like Klebsiella and E. coli have expanded into the vacancy. Low secretory IgA is the immunologic consequence of the same collapse. **The Klebsiella is downstream of the butyrate deficit, not a primary infection**, which is why the plan feeds the ecosystem back first rather than reaching for a broad antimicrobial kill.

Key Patterns

Beyond the labs, several patterns from your questionnaire and take-home data reinforce and add color to what the labs show.

Metabolic / Central Adiposity

- Weight gain rated **5/5**, gained around the belly; waist ~50 in, weight 273 lb, BMI 35
- Puffiness / soft edematous fat rated **3/5**
- Afternoon energy crash rated **3/5**
- Food cravings for rich/fatty foods
- Intake log: ~349 g carbs/day (large fraction from OJ, milk, Coke, Liquid IV), ~94 g protein, ~94 g fat, calories swinging 1,386 – 3,155 kcal/day

Bioenergetic Implication: This is the surface manifestation of the hyperinsulinemia. Liquid sugar delivers a fast glycemic load that drives repeated insulin spikes; insulin then locks fat into storage, blocks lipolysis, and drives renal sodium retention (the puffiness). Protein is roughly half of physiologic requirement for a 273-lb male, which robs you of the thermic effect of food and offers no satiety brake on the carbohydrate load. The correction is not to cut carbs — Free T3 at 4.0 is worth protecting — but to change the vehicle (whole food, not liquid), restore protein to adequacy, and add somewhere for glucose to actually go (muscle).

Non-Restorative Sleep and Probable OSA

- Non-restorative sleep rated **5/5**
- Waking at night rated **4/5**, later in the night, to urinate (nocturia)
- Trouble falling asleep 2/5; nightmares 2/5
- Confirmed snoring; variable bedtime (midnight–3 AM)
- Basal temp trend: 98.1 97.8 97.1 97.2°F (average 97.55°F, declining)
- Elevated Hgb/Hct as above; November nocturnal panic-on-waking event

Bioenergetic Implication: The low basal temperature is not a thyroid signal in your context — Free T3 is abundant. Thermogenesis needs both thyroid hormone *and* adrenergic signaling to execute, and metoprolol blocks the adrenergic arm. Add insufficient protein (low thermic effect), a sedentary baseline, and hyperinsulinemia driving substrate into storage instead of oxidation, and you get exactly the temperature pattern you recorded. The November event now reads convincingly as a nocturnal desaturation with sympathetic surge — the classic OSA presentation that is routinely misread as nocturnal panic. If confirmed, that event is what generated the tachycardia observation, which generated the metoprolol prescription, which is now suppressing your metabolism. One upstream fix cascades downward.

Iatrogenic Beta Blockade

- Metoprolol ER 25 mg daily for 4 months
- Original indication (tachycardia) never confirmed — Holter showed sinus rhythm with PVCs <0.1% and no arrhythmia
- Loss of morning erections rated **4/5**, anhedonia rated **4/5**, low libido

Bioenergetic Implication: Metoprolol is likely contributing to five of your six active problem domains: it suppresses lipolysis (fat loss resistance), inhibits T4 T3 conversion (raising reverse T3), reduces resting metabolic rate, suppresses nocturnal melatonin (non-restorative sleep, reduced dreaming), impairs insulin sensitivity, and is a well-established cause of erectile dysfunction and loss of morning erections. Deprescribing must be physician-directed and gradual (3–4 weeks

minimum) — abrupt cessation risks a rebound tachycardia that your system would almost certainly interpret as a cardiac event. Sequence matters: sleep evaluation first, ANS toolkit established, then taper.

Butyrate-Starved Microbiome with Klebsiella Bloom

- Bloating **4/5**, distention **4/5**, belching 3/5, flatulence 3/5, reflux 3/5
- Immediate post-meal symptoms **4/5** (upper GI functional pattern)
- Mixed Bristol types (2, 4, 2, 6, 4, 5, 4) — hard and loose in the same 4-day window
- Foamy urine **4/5**
- Urine indican 3+, sIgA 172, butyrate 2.1, keystone producers below detection, Klebsiella 4+

Bioenergetic Implication: All of the surface digestive symptoms map onto the depletion picture. The loose end of the Bristol range and the messy wiping reflect Klebsiella-driven irritation and reduced mucosal integrity; the harder end and the incomplete-feeling movements reflect low motility from insufficient short-chain fatty acids stimulating colonic contractions. Foamy urine is best explained by a bile-salt surfactant effect from the dysbiosis rather than a kidney problem (your eGFR is 106, creatinine 0.99). The raw carrot salad you added is already working on this exact mechanism — endotoxin binding and bile acid clearance — which is why it stays.

Health Anxiety and Sympathetic Dominance

- Irritability **4/5**, brain fog **4/5**, heart pounding / breathing difficulty **4/5**, anhedonia **4/5**, hyper-aware/restless 3/5
- Panic history since March; paradoxical activation on attempted rest
- Autism spectrum diagnosis

Bioenergetic Implication: With cortisol mid-range (12.2), thyroid abundant, glucose normal, and prolactin normal, there is no endocrine explanation for the somatic hypervigilance. This is a sensitized threat-detection system + interoceptive amplification pattern that is very characteristic of autism, and it is being maintained cognitively by the "notice sensation check catastrophize notice more sensation" loop. This is good news, actually: it is not a hormonal derangement you have to keep chasing, and the pattern is highly treatable with CBT/ERP-informed therapy. It also has a sequencing implication for the metoprolol taper — the ANS toolkit and therapy support need to be established first, so any transient rebound sensations during taper are not misread as catastrophic.

Nutrient and Sinus Findings

- Vitamin D 28 (insufficient), zinc 79 (low-normal), RBC magnesium 5.9 (at target — no dose change)
- Sinus pressure ~2 months, chronic congestion 3/5, post-meal mucus 3/5 (exacerbated after eating)

Bioenergetic Implication: The magnesium result confirms the 360 mg glycinate dose is doing its job. Vitamin D and zinc are both cheap, high-leverage corrections that support insulin sensitivity, androgens, thyroid conversion, and mucosal integrity — all of which are on the active list. The chronic sinus/mucus picture pattern-matches to a non-allergic inflammatory pattern with three plausible contributors: dairy (post-meal timing is suggestive), cigarette exposure, and the systemic inflammation from confirmed dysbiosis + hyperinsulinemia. A 4-week dairy elimination trial is the cleanest way to test the biggest variable.



Our Recommendations

Here's what we think will help you:

Precision Diagnostics

The information from your July draw does most of the diagnostic work. There is one additional evaluation that we consider high-priority now, and one reassessment schedule at Week 16. We are deliberately *not* re-testing markers that we can already predict (HbA1c, lipids, testosterone) — they'll be far more useful when they are measuring your response rather than restating what we already know.

Diagnostic	Provider	Price
Home Sleep Apnea Test (WatchPAT One)	Lofta	~\$189

What it is and why it matters: A one-night, at-home study using the WatchPAT One — an FDA-approved Type 3 device that measures peripheral arterial tone, oxygen saturation, heart rate, snoring, sleep stages, and body position. It sleeps in your own bed. Turnaround is roughly a week and includes a telemedicine review. It is the fastest, least invasive way to answer the OSA question, and if positive, generates a CPAP prescription directly. This test is warranted on clinical grounds regardless of the hematocrit interpretation: confirmed snoring, BMI 35, non-restorative sleep 5/5, nocturia, and the November nocturnal-panic sentinel event together justify it. If moderate-to-severe OSA is confirmed, treating it is one of the highest-yield single interventions available for insulin resistance, testosterone, sleep quality, and the tachycardia that produced the metoprolol prescription in the first place.

Ordering Your Labs (Week 16 Reassessment)

We are deferring the following panel to **Week 16** so that it measures response to the plan rather than restates today's baseline. When it's time, we'll run: fasting insulin + glucose (HOMA-IR), HbA1c, fasting lipids, total + free testosterone with SHBG and estradiol, CBC (to confirm the hematocrit trajectory), urine indican, repeat Genova GI Effects, vitamin D, and a full thyroid panel with reverse T3 to track the response to the metoprolol taper. Testing platform will be [Revelation Diagnostics](#) with the codes below.

- **Discount Codes:** Enter TWO codes at checkout: `PrismNoFee` (removes interpretation fee) + `AnalyzeFirst10` (10% off first order) OR `ANALYZE` (5% off subsequent orders)
- **Draw Instructions:**

- Fasting for 8+ hours (water only, no coffee, no caffeine)
 - Avoid strenuous exercise the day before and morning of
 - Stop any biotin supplements 3+ days prior (check your multivitamin)
 - If you are on metoprolol still at that point, take it 1–3 hours before the draw
-

Diet & Lifestyle Recommendations

The center of gravity of this plan is a **sustained caloric deficit with high protein, resistance training, and daily movement**, with liquid sugar removed. Everything else supports that or addresses a discrete parallel issue. Consistency matters more than perfection here — the intake log showed calorie swings of >1,700 kcal between days, and that instability alone destabilizes glucose regulation and appetite.

Protein to 180–200 g Daily

This is the single highest-leverage dietary change. Roughly doubling your current intake raises the thermic effect of food (protein burns ~20–30% of its own calories in digestion, vs 5–10% for carbs and 0–3% for fat), preserves lean mass in the caloric deficit, improves satiety, and directly reduces cravings for the fatty/rich foods you noted. Distribute across three meals at a minimum of 50–60 g each — not stacked into one big evening meal. High-leverage sources: eggs (aim for 2–3 daily — best choline source we have), shellfish (oysters, shrimp, scallops — zinc and B12 dense), lean beef, cottage cheese if you find dairy tolerable after the elimination trial, and organ meats (liver 1–2x/week if palatable).

Eliminate Liquid Carbohydrate Entirely

Orange juice, Coca-Cola, juice drinks, Liquid IV sticks — all out. This is not a Peat vs. anti-Peat argument; it is a specific correction for a specific finding. Liquid sugar hits the portal vein fast, produces the largest post-meal insulin excursions, and drives hepatic de novo lipogenesis. At an insulin of 23, that framework element is actively working against you. Replace hydration with plain water + salt to taste, or a sugar-free electrolyte source. Keep whole fruit — it's a totally different animal because of the fiber, chewing, and absorption kinetics.

Whole-Food Carbohydrates at 200–250 g/Day

Do not drop carbs below this range. Free T3 at 4.0 is one of the best numbers on your panel and we are protecting it — aggressive restriction drives reverse T3 higher and dismantles that. Sources: well-cooked white rice, potatoes and sweet potatoes, whole fruit (bananas, berries, apples, oranges — not juice), root vegetables, well-fermented sourdough as tolerated. This is a "carb vehicle change," not a carb cut.

Moderate Fat to 70–90 g/Day

Down from the 94 g average and well off the 139 g peaks in your log. Prioritize saturated sources over PUFA: butter, coconut oil, extra virgin olive oil, and the fat that comes with the leaner meats you're eating. Continue avoiding seed oils.

Three Structured Meals, 3–4 Hours Apart

Eliminate the pattern of first food at 10:30 AM and last food at 5–7 PM. That extended morning fast plus the calorie swings are keeping your stress systems primed. Regular timing supports circadian rhythm, gut motility, and steady glucose regulation.

Continue the Raw Carrot Salad Daily

You noted it helps and the mechanism is exactly right for your case: endotoxin binding, bile-acid clearance, and mild antimicrobial action against overgrowth. Keep the current formula (grated raw carrot + a small amount of coconut oil + a splash of vinegar).

4-Week Dairy Elimination Trial

Milk and cheese out entirely for 4 weeks. This tests the sinus pressure, chronic congestion, and post-meal mucus in one clean move, and it also removes further liquid carb + insulin load. After 4 weeks, reintroduce deliberately and observe over 3–5 days. If tolerated, small amounts of fermented dairy (Greek yogurt, aged hard cheeses) can come back first.

Full Alcohol Abstinence

The ALT drop from 50 → 32 is real objective evidence that this change is working. Protect that trajectory through the fat loss phase.

Resistance Training 3x Weekly

Not optional at HOMA-IR 4.8. Skeletal muscle is the primary site of glucose disposal in the body, and building more of it is the single most durable insulin-sensitivity intervention available. Your prior compound-lifting experience is a real asset — return to squat, deadlift, bench, overhead press, row patterns, 3 working sets each, progressive load. Two full-body sessions per week is enough to start; three is better.

6,000–8,000 Steps Daily + Post-Meal Walks

Walking is the cardio, not high-intensity work. A 10–15 minute walk after each meal is one of the most direct tools we have for blunting postprandial glucose — muscle contraction pulls glucose out of the bloodstream via GLUT4 without needing insulin at all. You already walk after meals; formalize it. Then build the daily total from there.

Weight Loss Protocol

After the bathroom, same conditions. Take a 7–10 day rolling average — this smooths out the noise of daily water fluctuations and gives you a real signal. If the rolling average is not dropping 1–2 lb per 10 days, drop 10 g of fat OR 25 g of carbs OR add 2,000 steps. **Never reduce protein.** This is going to be a long diet given the starting point, so plan on incorporating diet breaks / refeeds every 6–10 weeks to protect metabolism and adherence.

Fixed Wake Time + Compressed Bedtime

Fixed wake time daily regardless of when you fell asleep — this is your primary circadian anchor. Compress bedtime from the current midnight–3 AM spread into a 1-hour window. All liquids restricted after 4 PM to reduce nocturia.

Morning Sunlight Within 20–30 Minutes of Waking

10 minutes minimum, barefoot on grass if feasible (grounding + light in one). This locks in the circadian rhythm, drives the appropriate morning cortisol peak (so evening cortisol falls when it should), and supports thyroid function through the SCN. You already like standing in the sun — front-load this to the morning.

Nicotine — Structured Reduction with a Cessation Target

Elevated in priority by the hematocrit. Carbon monoxide from cigarettes drives compensatory red cell production and compounds any nocturnal hypoxemia — the two mechanisms literally stack. Smoking is also contributing to the sinus symptoms (direct mucosal irritation) and the erectile symptoms (endothelial dysfunction). Given your history of cyclical abstinence periods, we know you can do this. A defined stepdown (e.g., 5 → 3 → 1 → 0 over 4 weeks) with a target date works better than "cut down when I can."

NSDR / Diaphragmatic Breathing 20–25 Minutes Daily

For a sympathetically-dominant baseline with paradoxical activation at rest, this is the highest-yield single practice. Yoga Nidra or Huberman's NSDR audio tracks work well. Pair it with 10 minutes of box breathing (4-in, 4-hold, 4-out, 4-hold) scheduled deliberately *before* any planned rest — you've identified rest itself as the trigger context, so we're building parasympathetic tone into that specific moment.

Cold Face Immersion — Acute Tool

Bowl of ice water, face in for 30 seconds. Activates the mammalian dive reflex → rapid parasympathetic activation. Use this when a somatic spiral starts to build. It works within seconds and gives you a physical intervention that beats the checking loop.

Therapy Referral — Core Intervention

Not adjunctive. A CBT or ERP-informed clinician experienced with autistic adults is where the health anxiety pattern will actually resolve. The "notice → check → catastrophize" loop is a well-characterized target and highly treatable. This needs to be in place before the metoprolol taper begins, so we recommend starting the search now.

PCP Coordination for Metoprolol

Present the Holter finding (sinus rhythm, PVCs <0.1%, no arrhythmia) alongside the metabolic rationale for deprescribing. The taper itself must be physician-directed and gradual (3–4 weeks minimum) — do not stop abruptly. **Do not initiate the taper until the sleep study has returned and the ANS toolkit is consistently in practice.** If OSA is confirmed and treated first, that removes the upstream tachycardia driver before we take away the rate control.

Nasal Patency Support

Continue nasal strips at night. Add saline rinse (Neti pot or squeeze bottle) daily. Nasal obstruction meaningfully worsens obstructive sleep events, so this is a low-cost, immediate win for the airway story.

Supplement Recommendations

This is organized in phases — the first block starts now, the second block comes in at Week 3 after the dietary transition has settled, and the third phase (repopulation) starts at Week 11. The conditional Klebsiella phase runs only if bloating and distention are still >2/5 at Week 6.

Phase 0 (Now) — Continue, Add, and Discontinue

Continue:

Supplement	Provider
Magnesium Glycinate 360 mg	Pure Encapsulations (your current)

Dosage and / or Timing: Continue current dose before bed.

Notes: RBC magnesium at 5.9 is right at functional target. No change needed — this is working exactly as intended.

Supplement	Provider
Thiamine (B1) 200 mg	Nutricost (your current)

Dosage and / or Timing: Continue daily.

Notes: Pyruvate dehydrogenase cofactor — directly relevant to glucose oxidation and lactate clearance, which is exactly the metabolism arm that needs support at HOMA-IR 4.8. Also stabilizes the autonomic nervous system.

Supplement	Provider
L-theanine 200 mg	Walgreens (your current)

Dosage and / or Timing: Split — 100 mg AM + 100 mg PM, rather than only at bedtime.

Notes: Blunts cortisol response to acute stress. Splitting the dose gives you daytime anxiolytic cover, not just sleep support.

Supplement	Provider
Vitamin E	Health Natura — code "PRISM111" for 20% off

Dosage and / or Timing: 1 mL daily.

Notes: Anti-inflammatory, protects mitochondrial membranes, opposes excess estrogen signaling.

Supplement	Provider
Glycine	(your current)

Dosage and / or Timing: 1–3 g before bed.

Notes: Sleep quality, glutathione precursor, offsets excitatory amino acid load.

Supplement	Provider
Taurine	PureBulk — code "PRISM" for 10% off

Dosage and / or Timing: 2 g daily.

Notes: Bile conjugation (relevant to the foamy urine picture), GABAergic tone, cardiac stabilization, and independent insulin-sensitizing effects — a lot of value from one inexpensive amino acid.

Supplement	Provider
Betaine HCl	(your current)

Dosage and / or Timing: Continue titrating toward warmth with protein-containing meals; document your capsule count to warmth.

Notes: Elastase >500 shows your endogenous digestive machinery is intact, so this is a symptomatic support during the protein ramp-up rather than a load-bearing part of the plan. Plan to taper it off at Week 11.

Add:

Supplement	Provider
Vitamin D3	Health Natura — code "PRISM111" for 20% off

Dosage and / or Timing: 10,000 IU daily for 10 weeks (2 drops), then 5,000 IU maintenance (1 drop). Target 25-OH D of 50–70 ng/mL.

Notes: Directly relevant to insulin sensitivity, immune regulation, mood, and androgen signaling — every one of which is on your active list. Pair with the K2 below.

Supplement	Provider
Vitamin K2 (MK-7)	Health Natura — code "PRISM111" for 20% off

Dosage and / or Timing: 2 drops daily with the D3.

Notes: Directs calcium to bone rather than soft tissue when D3 is at repletion doses, and supports mitochondrial glucose metabolism in its own right.

Supplement	Provider
Myo-Inositol	Zazzee

Dosage and / or Timing: 2 g twice daily (1 scoop = 2 g).

Notes: Dual-purpose here — it acts as a second messenger in insulin signaling (directly targeting the hyperinsulinemia) and has documented anxiolytic effects specifically in panic-pattern anxiety. It is one of the very few interventions we can point to that lands on both of your central problems. Strong fit alongside the autism comorbidity.

Supplement	Provider
Ginger Extract	Zazzee

Dosage and / or Timing: 1 capsule AM + 1 mid-afternoon, on an empty stomach.

Notes: Prokinetic — supports the migrating motor complex that sweeps the small intestine between meals. Directly relevant to the upper-GI bloating and belching, and helps discourage *Klebsiella* recolonization by preventing stasis.

Supplement	Provider
Zinc Carnosine	Pure Encapsulations

Dosage and / or Timing: 1 capsule daily with the largest meal.

Notes: Zinc-carnosine specifically supports gastric and duodenal mucosal repair — targeted at the acid reflux and immediate post-meal symptoms. Also nudges your low-normal zinc (79) up, which is a cofactor for T4 → T3 conversion, aromatase inhibition, and testosterone synthesis.

Supplement	Provider
Phosphatidylserine	Solgar

Dosage and / or Timing: 200 mg in the afternoon or before bed. Can increase to 400 mg if needed.

Notes: Blunts cortisol output — targets the second-half-of-night arousal pattern you're waking with. Good fit alongside the sleep architecture work.

Supplement	Provider
Digestive Enzymes (broad-spectrum)	Masszymes — BiOptimizers

Dosage and / or Timing: 1 capsule before each meal.

Notes: Short-term symptomatic support only through the dietary transition — pancreatic elastase >500 says you do not have a true insufficiency. Taper off at Week 11.

Discontinue:

Supplement	Reason
Liquid IV	~10 g sugar per serving. Directly counterproductive at insulin 23. Replace with plain water + a sugar-free electrolyte source (LMNT, Trace Minerals, or DIY salt + potassium in water).
Niacinamide 500 mg	No attributable benefit at this dose in your case, and nicotinamide has a dose-dependent effect on insulin sensitivity that is unhelpful here. Removing simplifies the picture.
Aspirin 650 mg	Reduce to 81 mg OR discontinue entirely. There is no clear indication for high-dose aspirin in your case, and it carries GI risk we do not need to layer on top of the gut work.
Desiccated thyroid / glandulars / T3	Permanently. Free T3 at 4.0 with Free T4 at 1.5 means exogenous thyroid hormone in your system reproduces the March event. No self-directed trials under any circumstance — this is the single most important discontinuation on the list.

Phase 1 (Weeks 3–6) — Butyrate Restoration and Mucosal Support

Continue everything from Phase 0. Add the following. This is the core of the gut rebuild.

Supplement	Provider
Tributylin (butyrate)	DEVA

Dosage and / or Timing: 1 capsule daily with food for the first week, escalating to 2 capsules daily (split AM/PM) as tolerated.

Notes: Direct replacement for the measured butyrate deficit (2.1 vs. ≥ 3.6). Refuels colonocytes, restores epithelial hypoxia, tightens tight junctions, and independently improves peripheral insulin sensitivity. We're intentionally choosing butyrate over L-glutamine here — a subset of anxiety-prone individuals get an excitatory response from the glutamine-to-glutamate conversion, and that is the wrong direction for you.

Supplement	Provider
SunFiber (PHGG)	Tomorrow's Nutrition

Dosage and / or Timing: Start at 1/4 scoop (~1.25 g) daily with food. Titrate up by 1/4 scoop every 4–5 days as tolerated, targeting 1 full scoop (~5 g) by end of Phase 1. Dissolve in water, coffee, or food.

Notes: This is the primary prebiotic substrate for the missing butyrate producers. PHGG is chosen specifically because *Ruminococcus bromii* (the keystone resistant-starch degrader) is below detection in your microbiome, so PHGG is the better-utilized substrate. Titrate slowly given the 4/5 bloating — the goal is a sustained full dose long-term, since underfeeding the microbiome is what created this in the first place.

Supplement	Provider
Saccharomyces boulardii	Pure Therapro

Dosage and / or Timing: 1 capsule (5 billion CFU) daily on an empty stomach.

Notes: This is the specific probiotic Genova flags for your profile. It raises secretory IgA directly (targeting your 172), competitively antagonizes *Klebsiella* and other Enterobacteriaceae, and does so without disrupting the commensal population — which is precisely what a broad antimicrobial would do.

Phase 2 (Weeks 7-10) — CONDITIONAL: Only If Bloating/Distention Remain >2/5 at Week 6

Skip this entirely if symptoms have resolved. The Genova data does not support a broad kill, and the expected trajectory is that the rebuild handles the Klebsiella on its own.

Supplement	Provider
Microcidin AF	Vita-Aid

Dosage and / or Timing: Start 1 capsule daily, titrate to BID as tolerated. Course length: 2-3 weeks, not longer.

Notes: This formulation combines membrane-active essential oils with berberine, which inhibits microbial DNA replication, disrupts cell division, and modulates efflux pumps, increasing intracellular antimicrobial accumulation. Berberine also alters gut microbial composition and reduces endotoxin burden partly via AMPK activation and effects on bacterial metabolism. Cinnamon provides additional antimicrobial polyphenols while potentially mitigating excessive “cooling” or GI irritation from berberine. Neem and uva ursi contribute further antimicrobial and anti-adhesive effects, limiting bacterial colonization and persistence along the mucosa. In GI conditions, this creates a multi-mechanistic antimicrobial environment—targeting membranes, replication, and adhesion—while being suitable for low-FODMAP protocols due to the absence of fermentable allium compounds.

Supplement	Provider
Interfase Plus	Ther-Biotic / SFI Health

Dosage and / or Timing: 1 capsule daily on empty stomach from Day 1 of Phase 2, titrate to BID.

Notes: Biofilm disruptor. Enzymatically degrades the polysaccharide matrix that shields Klebsiella and chelates the stabilizing metals within it. Runs concurrent with Microcidin.

Supplement	Provider
NAC (N-Acetylcysteine)	PureBulk — code "PRISM" for 10% off

Dosage and / or Timing: 600 mg daily, introduced 3–5 days after Interfase Plus is tolerated, taken at the same time.

Notes: Mucolytic — helps disrupt biofilms and provides antioxidant support against the die-off oxidative load. Also a glutathione precursor, which is a useful side benefit given the smoking history.

Supplement	Provider
Grass-Fed Lactoferrin	LifeGiving Store — code "Optimize" for 10% off

Dosage and / or Timing: Start at 2 scoops (120 mg) daily, introduced 3–5 days after NAC. Can increase up to 1 g/day if well tolerated.

Notes: Sequesters free iron away from Enterobacteriaceae — Klebsiella needs iron to grow, so this specifically starves the target. Also supports the gut barrier.

Phase 3 (Weeks 11–14) — Repopulation (Runs Regardless of Whether Phase 2 Was Used)

Continue Ginger, Magnesium, SunFiber (at full dose), Tributyrin, Myo-Inositol, Vitamin D (maintenance dose), Taurine, Zinc Carnosine. Discontinue Phase 2 agents if used. Taper off Betaine HCl and Digestive Enzymes. *S. boulardii* can continue through the end of this phase.

Supplement	Provider
MegaSporeBiotic	Microbiome Labs (via Amazon)

Dosage and / or Timing: 1 capsule every other day for the first week, then 1–2 capsules daily with food.

Notes: Spore-forming *Bacillus* species — survives stomach acid, exerts antimicrobial pressure on residual Enterobacteriaceae, and helps re-establish colonization resistance. The reseeded piece.

Supplement	Provider
Pendulum Metabolic Daily	Pendulum

Dosage and / or Timing: 1 capsule daily with food.

Notes: Chosen specifically for its *Clostridium butyricum* and *Akkermansia muciniphila* content — the exact two species below detection on your Genova, and the two species with the best documented glycemic benefit. This is the microbiome-level answer to both the butyrate deficit and the hyperinsulinemia in a single product.

Supplement	Provider
Colostrum	Mt. Capra

Dosage and / or Timing: 2 scoops (~3 g) daily. **Hold introduction until dairy reintroduction at Week 4+ is uneventful.**

Notes: Raises secretory IgA directly (your 172 is at the low end). Delayed intentionally so it does not confound the dairy elimination trial.

Phase 4 (Week 16 Onward) — Maintenance

Continue SunFiber, magnesium, vitamin D maintenance, myo-inositol, taurine, ginger as needed. Discontinue tributyrin, colostrum, and other phase-specific agents.

Conclusion

This plan looks long on paper because a lot of layers moved this round, but the underlying story is short: **hyperinsulinemia and butyrate-starved gut are the same problem expressed in two places**, and one lever — restructured nutrition + resistance training + fiber diversity + specific microbial rebuild — moves both. Fat loss is the objective, and every other complaint on your list (the sleep, the anxiety, the fatigue, the mucus, the erectile symptoms) is expected to follow it downward because they share the same upstream drivers. The metoprolol picture is the wildcard that has been quietly amplifying nearly everything, and handling it correctly in sequence with the sleep study and the ANS work is what unlocks the rest.

Two things to name plainly:

1. **Do not restart desiccated thyroid or any T3-containing product under any circumstance.**

Your Free T3 is at the top of the range. The March event was the predictable result of adding exogenous hormone to an already-adequate system. This is the single hardest boundary in the plan.

2. **The metoprolol taper is physician-directed and comes after the sleep study, not before.**

If you feel the impulse to abruptly stop it, please reach out first — the rebound is real and would almost certainly trigger a health-anxiety cascade.

If anything in this plan is unclear, if you have adverse reactions to any of the new supplements, if sinus symptoms worsen or become unilateral, if you develop fever or purulent discharge (ENT referral trigger), or if the somatic anxiety escalates during any of the taper phases — **please contact your primary Prism Advisor before making a change on your own.** This is a case where the sequencing matters as much as the interventions themselves, and we'd rather adjust the plan together than have you interpret a transient sensation as evidence to override it.

You already have proof-of-concept working in your favor: the ALT drop from 50 to 32 is what happens when the right intervention meets the right root cause. We're doing that again, on a bigger scale, across the full picture. Let's get you moving.

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Tip: Ctrl+Click (Windows) or Cmd+Click (Mac) to open links in a new tab

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Tip: Provider links can be opened in new tabs using Ctrl/Cmd+Click

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